Standards Wars Past, Present, and Future
Can the Free Market Rationalize and Regulate Itself?

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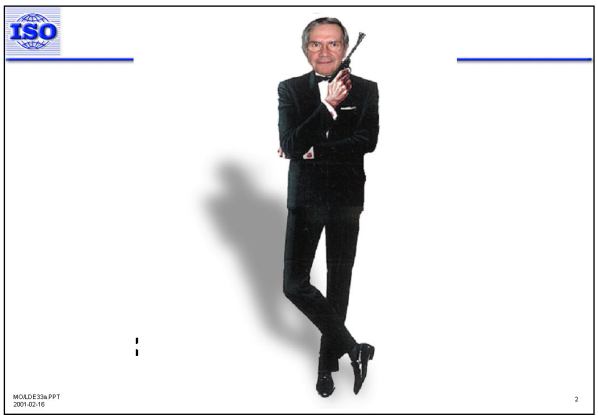


LDE AS JAMES BOND

And so to "Standards Wars." There is no need to check around for cover as I do not intend shooting at anyone, although I do hope that the points I want to make will hit some relevant targets.

As I shall be retiring from ISO in a few years, I have been thinking about my next career. Internet interactive games seem like a good niche, so I thought I would give that a try. When you attempt something new, it helps if you can make a connection to things you already know something about, so I have built on my varied experiences in standardization to design my first Internet interactive game: "Standards Wars—Past, Present and Future."

The game is still at the early design stage and I have not yet completed the software for the first working prototype. However, I brought along a demonstration version to give you an idea of what it is all about. I will be inviting you to play along with me today, and free copies are available so you can play to your own scenarios. Hopefully, that will whet your appetites enough to place an advance order to be sure you get the actual game when it hits the Net just before next Christmas.

Before we play, I need to run through two basic rules of the game that somewhat resemble the familiar rules of "Monopoly," a game many of us grew up with.

Rule 1: The first rule of the game is that free enterprise economics rule the world. This is not such a far-fetched rule when looking back over the past several decades with the growing economic predominence of free enterprise systems, led by the USA, together with the fall of the Berlin Wall and the demise of communist theory and practice across the world. Many political commentators take the position that the free enterprise system has triumphed and is now here to stay. Events still occur, now and again, that take us by surprise —however, Seattle and Porto Allegre notwithstanding, globalization economics based on the free enterprise model is clearly the safest backdrop assumption for the standards games we all like to play.

Rule 2: Standardization is contrary to the natural tendencies of free enterprise systems, which thrive on competition to produce dynamism, innovation, diversity, and abundant consumer choice. However, all great standardizers, including Herbert Hoover, the great granddaddy of NBS and NIST, have understood that if left completely unchecked, free enterprise systems can become dangerously chaotic. And, when this is the case, coherent markets will not expand easily; economic growth will be dampened, and there will be heightened risks of user confusion and injury. Without rationalization of production and supply, large reserves of scarce national resources will be wasted, and without a degree of regulation, either by governments or in the form of industry self-regulation, it is difficult to imagine how public issues of health, safety, and the care of the environment are to be handled by society.

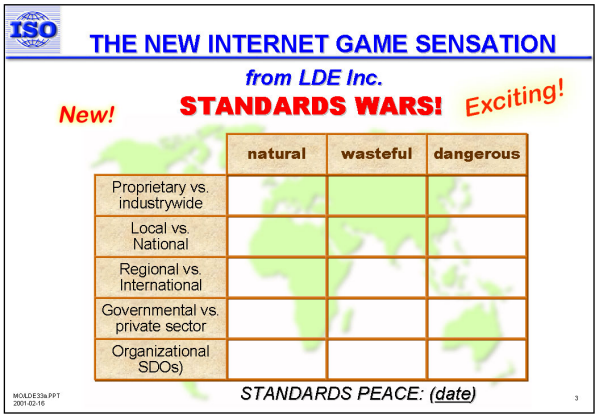
So, what is a standards war?

Given that all of us align ourselves with free enterprise economic theory and agree that standardization, while not a natural free enterprise undertaking is an essential moderator of its potential downsides, we come quickly to an appreciation that none of us has enough wisdom to individually direct the course of standardization. Such direction has also to be subject to a balance of "market and public policy needs" in every country, sector by sector, and with an appreciation of the increasingly interdependence of nations and the growing necessity to compete effectively in international markets.

Given also that the many market players, including industry and their trade associations and ad hoc fora, governments, and national and international standards organizations all have their own objectives to pursue, and interests to protect, it is fairly straight forward to see how "lack of agreement" on how and when and why to standardize would come to the fore.

A standards war, in my conception, is a state of affairs in which standardization has not yet happened, but where the evidence that it should happen is continuing to grow, sometimes to the point of becoming extremely urgent. I hope that a few examples will help to show what I intend to illustrate.

Let's have a look at the game:



STANDARDS WAR GRID

As you can see, the game is based on a grid which can be used to analyze Standards Wars: Past, Present and Future. The vertical axis is used to identify the combattants in a given Standards War. Is it an issue of proprietary vs. industrywide standards? Are we confronted with differing local and national objectives? Are we facing conflicts between larger regions like the European Union vs. U.S. or International Standards? And, to what extent are the standards issues Governmental vs. Private Sector? Or, as is often claimed, are we only fighting about which standards organizations, national, regional, or international should be developing which standards?

The grid is then divided into columns to help us analyze to what extent a particular war is a natural consequence of free enterprise diversity (and possibly not solvable with industrywide standardization) and to what extent the results of the war are excessively wasteful or dangerous.

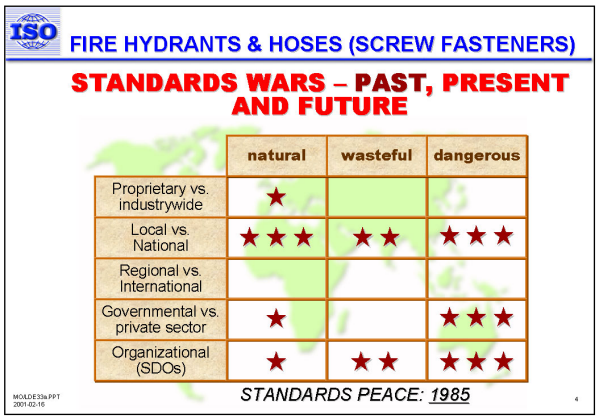
To get a better idea of how the game is played, let's look at a few examples.

First, a Standards War of the Past involving screw fasteners: specifically, of fire hydrants and hoses. This war was taking place in 1904 and its negative effects were felt most severly in the city of Baltimore. I am indebted to Albert L. Batik's book, *A guide to standards,* for this description of what happened:

"A fire got out of control and started to sweep through the city. Fire companies as far as 100 miles away rushed to the aid of the stricken city, to no avail. It was found that their hose couplings could not attach to the hydrants, nor to other hoses—there were no standard couplings. While firemen watched helplessly, Baltimore burned. This disaster was the stimulus to establish standard hose couplings by the National Fire Protection Association, and standard screw threads and other mechanical standards by the American Society of Mechanical Engineers."

Now, I need to tell you the third rule of the game—the interactive part. Players are first asked to identify themselves in one or another of the categories of combattants, and then with the use of a zero to three star ranking system to characterize the nature and gravity of the war as they see it. Finally, they are asked to identify a date when they believe the war was effectively over and a "Standards Peace" was declared. This date, of course, can be sometime in the future. When the player has registered his or her characterization, their data will be compared with that of other players, and (for a small yet to be determined fee) they can see where they came out in relation to one another.

Here, you can see my own charaterization of the screw thread war for fire fighting equipment in and around Balitmore. Naturally, I put myself in the standardizing organization combattant category. The absence of the needed standards was understandable, if not excusable, at the time because three competing screw and fastener standards existed: the British Whitworth Standards, the American "Sellers" Standards, and the Baltimore Steamer Standards. Manufacturers seemed unable to form a concensus view on which standards to follow, and because of high costs



GRID FOR FIRE HYDRANTS & HOSES

to convert, the problem could be at least partly described as Proprietary vs. Industrywide. Local vs. National government purchasing decisions were obviously part of the problem, although to my knowledge all of the governments involved expected the standards to be developed by the private sector, and that is what eventually happened at the organizational level with NFPA and ASME.

When do I think this war was over? When I first thought about it, my guess was in the early 1930's at least in the United States, until I learned that even today, fire trucks in many areas contiguous to Baltimore still carry adapters to hook two different types of fire hydrants to their hoses.

Then, some 20 years ago, I learned about the international screw thread war in ISO, which apparently started in 1947 with the creation of ISO TC 1 "Screw Threads" and went on in earnest for some 17 years before the first standard was published, and another 20 years before the definitive set of metric ISO screw thread standards were finally approved in the early 1980's.

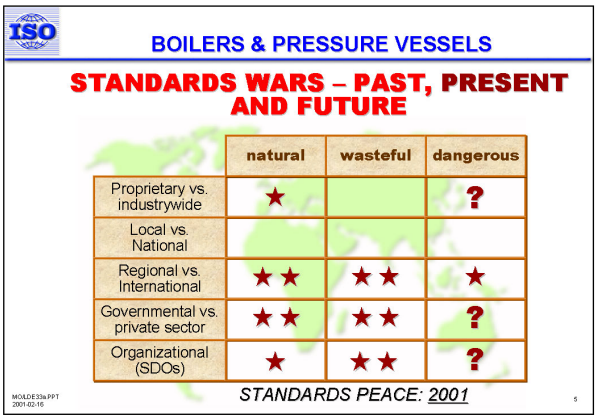
Daddy, are we there yet? Is the war over?

I think so. Now, we turn again to the self-regulating nature of free enterprise market players to voluntarily, and in their own self interest, achieve the levels of screw thread standardization they need to make their respective markets prosper.

Next, I would like to turn to an example of a Standards War that certainly produced very dangerous consequences in the United States until peace was made at the national level, and spread over to the regional level in Canada, Mexico and parts of South America. However, that particular war, which involves boilers and pressure vessels, continues today at the Regional vs. International and Organizational levels.

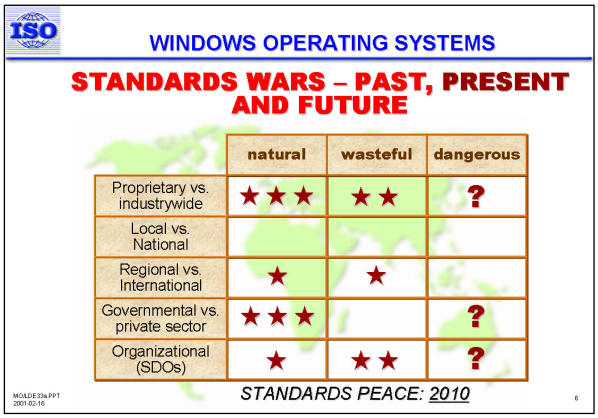
I am again quoting from Al Batik's book to set the scene: "Steam power was a great step forward for mankind. It is hard to believe, though, how little was understood of the destructive power of steam. In 1884, approximately 10,000 boiler explosions and failures occurred—property damage, fatalities and injuries must have been terrible. In contrast, in the period 1974 to 1984, there wasn't a single boiler explosion in the United States. What was the difference? It was the development and application of the ASME Boiler and Pressure Vessel Code."

However, if ASME's standards solved the problem at the national level so well that they have been successful in the Americas and other regions, there are rival European standards and, at the international level, there is no agreement. While you check out my analysis of the current state of this war, let me tell you that even though ISO/TC 11, *Boilers and pressure vessels,* was one of the first ISO technical committees, by the time it was established, many countries had already firmly established national standards for boilers and pressure vessels, complicated by the fact that these devices were also subject to national and local safety regulations. The result is that national delegations to ISO/TC 11 have stuck relentlessly to their positions and movement to developing International Standards has been hopelessly deadlocked.



GRID FOR BOILERS AND PRESSURE VESSELS

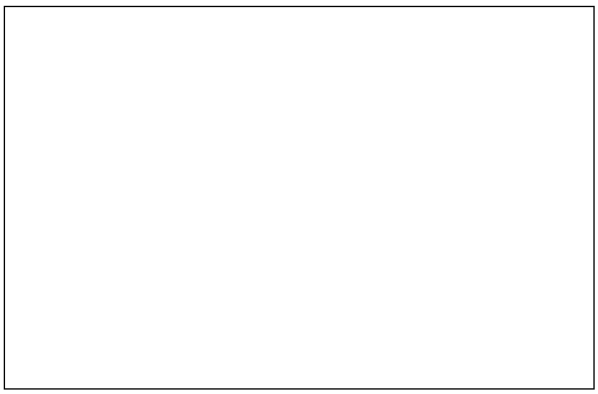
A way out of this impasse came with a proposal a couple of years ago to re-activate the committee in order to prepare an umbrella standard which would specify performance requirements for pressure equipment codes and standards that are in current use throughout the world. I greeted this development enthusiastically, because it seemed to me a means by which ISO could help to stabilize, contain, and acknowledge the realities of different, but equally good standards solutions existing in world trade, even though they may never be design compatible. I'm pleased to report that this work has advanced, thanks much to the work of ASME, and that ISO/DIS 16528, *Boilers and pressure vessels—International harmonization of codes and standards,* is now at draft International Standard stage in ISO.



GRID FOR WINDOWS OPERATING SYSTEM

My third example of a Standards War analysis is a topical one, the Windows operating system. You may or may not agree with where I have put the stars on this grid. However, whatever your views on Microsoft's alleged monopoly strategy, it must be evident that the company's successful Windows operating system, with 80+ % of world market share, has every reason to be considered as a de facto international standard.

Is this war over? Will we eventually see something that could be called a consensus based industrywide standard rather than a proprietary one? What are the downsides to the current state of affairs? Here, you see nearly all my stars in the Government vs. Private sector box. And, for a small additional fee, you can see Bill Gates' grid, as soon as, and if ever, he agrees to play the game.



GRID FOR BILL GATES

For those of you who would like to play Standards Wars, I'll be glad to let you have an electronic copy of my grid so you can locate your stars according to your own analyses of the examples I have given. Of course, you can also play with other Standards Wars. If time allowed, I'd like to play the metric system "SI" war game with you, or the field bus war in IEC, and there are many new wars coming up on the radar. Just to mention a few: the home wireless war between Home RF and Wi-Fi; the war for domination of the third-generation mobile telephone market between incompatible American, Japanese, and European standards; the continuing standards conflict over JAVA; the refrigeration technology war between hydrocarbon refrigerants vs. PFC's . . . , etc. etc. etc.

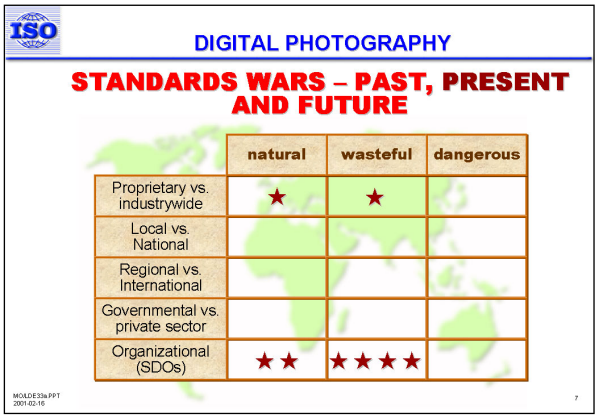
I could go on, but I want to make my point here that these wars paradoxically show the health and strength of the free enterprise system and also the standardization systems that support it.

I noted earlier that standardization is not the natural first reaction of market players. But some of it is, in one way or another, inevitable. It happens in coherent free markets when market players come to the conclusion that the free market diversity of specifications for market transactions has become too heavy to support and that a standards-based rationalization will bring benefits to all the market players.

When I speak about international standardization and coherent markets, I am referring to the myriad of business transactions which have become, or are on the way to becoming, truly global in character. Everyday, this list of truly global market sectors is growing—automotive, informational technology and telematics, pharmaceutical, medical devices, petroleum etc.. The trend is irreversible—no need to argue about it. Coherent global markets are already there, or very close to being there, in very many sectors and the market players eventually become insistent on rationalizing their business transaction processes with globally agreed standards.

The pertinent question is whether or not these global market players will turn to standards development organizations like those represented here today, or will they turn to consortia, or will they be content to let the market leaders dominate? We may not yet know the answer to this question from sector to sector, but it is clear that the major market players are not locked into the SDOs' way of doing things and that we offer only one possibility for supplying their standards' needs.

Market players who decide they need standards are not obliged to beat a path to the doors of any of the SDO's represented here today, and this brings me to the final grid in this demonstration. While it cites a specific case, "digital photography," it illustrates a general point on which you may have heard me harp several times before.



GRID FOR DIGITAL PHOTOGRAPHY

Here we see one of the classic cases in which the borderlines between two standards developing organizations, and the decisions as to which organization should be doing the standards work, has been so contentious as to cause the market players to pull their hair and consider abandoning both organizations. The organizations (very close to home) are ISO, where the classic photochemical technology and camera optics work has been done for donkey's years, and IEC, where electronics and digital media data processing have similar stong roots. This was a standards war of the most embarassing type, at least for me. As you can see, whenever I put a star in the organization combattant box, I automatically put two stars in the wasteful consequences box. We, as standards organizations, all of us, really do shoot ourselves in the foot when we allow these kinds of wars to drag on.

Here, at least, I believe we will have a happy ending. ISO and IEC decided, already in 1999, that disputes over allocation of standards development work between ISO and IEC Technnical Committees would not be allowed to continue, even if an arbitary decision as to who does what had to be taken at the level of Presidents and Vice Presidents. This was, in fact, the case for the digital photography conflict in 2000. Assuming the decision sticks, and we have every intention that it will, I identfy the "Standards Peace" date of 2002.

LDE AS JAMES BOND (again)

Now, in closing, let me apologize to anyone who might have felt offended by my rather "theatrical" use of the word wars. I only wanted to get your attention, and to show you why I have always found the standarization business to be so fascinating.

The Standards Wars that we SDO's might fight and witness may seem like petty affairs in comparison to real wars, or even to real life competition in the business environment. And, with all due respect to my SDO counterparts, I don't think any of us see ourselves as field marshals, master sergeants, or even undercover operatives like James Bond—but you never know!!

While standardization deserves to be taken seriously, maybe we sometimes take ourselves a little too seriously. Today, should not be that kind of a day.

Thank you for you kind attention.